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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/529,680	04/17/2000	GERHARD WOTTING	MO-5599/LEA3	1031
157	7590	10/20/2004	EXAMINER	
BAYER MATERIAL SCIENCE LLC			GROUP, KARL E	
100 BAYER ROAD			ART UNIT	
PITTSBURGH, PA 15205			PAPER NUMBER	

1755

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/529,680

Applicant(s)

WOTTING ET AL.

Examiner

Karl E. Group

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 14-20 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-20 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 14-20,23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeckley (5,508,241) further in view of Komatsu et al (5,439,856).

Yeckley teaches a silicon nitride sintered body to be used as a ball bearing material including .2-1 wt% alumina, 1-2% MgO and 2-4% silica, see column 2, lines 3-20. Yeckley fails to teach the addition of a dispersed phase selected from SiC, TiN, TiCN and HfO<sub>2</sub>.

Komatsu et al teach a silicon nitride body that may be used in sliding parts such as bearings (column 1, lines 37-38) which further includes oxides, carbides or nitrides of Ti, Hf, Mo and W which are used to increase the strength of the silicon nitride composite.

It would have been obvious to one of ordinary skill in the art at the time of the invention to further include oxides, carbides or nitrides of Ti, Hf, Mo and W in the silicon nitride bearing taught by Yeckley because Komatsu et al teach such an addition further improves the strength of the bearing material.

3. Claims 14-19,23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeckley (5,508,241) further in view of one of Mehrotra et al (4,826,791) or Ukyo et al (5,532,268).

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Yeckley is described above. Yeckley fails to teach the addition of a silicon carbide.

Ukyo et al teach a silicon nitride sintered body including silicon carbide grains to improve the high temperature properties such as creep resistance of the silicon nitride body (see column 3, lines 63-67).

Mehrotra et al teach a sintered silicon nitride body where silicon carbide is added to improve the hardness of the silicon nitride (see column 3, lines 8-11)

It would have been obvious to one of ordinary skill in the art at the time of the invention to further include silicon carbide in the silicon nitride bearing taught by Yeckley because Ukyo et al and Mehrotra et al teach such an addition further improves the physical properties of the bearing material.

### ***Conclusion***

4. The rejections over Hintermeyer, Sato et al and Richerson et al are withdrawn in view of applicants' amendments to the claims and the arguments.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the


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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl E. Group whose telephone number is 571-272-1368. The examiner can normally be reached on M-F (6:30-4:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell can be reached on 571-272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Karl E Group  
Primary Examiner  
Art Unit 1755

Keg  
10-17-04